III. REMARKS/ARGUMENTS

Applicant gratefully acknowledges the allowance of claims 21 and 44-48 and the potential allowability of claims 27 and 28.

A. Summary of the Amendments

The present application still contains 54 claims.

No amendment to the claims has been made.

The drawings have been amended in order to correct a minor informality in one of the figures.

The specification has been amended in order to correct minor informalities detected by the Applicant upon review of the present application.

Applicant respectfully submits that no new matter has been added to the application under the present amendment.

B. Summary of Objections, Rejections and Reply

1) Rejection of claims 1-20, 39-43, 49, 50-52 and 54 under 35 USC 103

In the Office Action, the Examiner has rejected claims 1-20, 39-43, 49, 50-52 and 54 under 35 USC 103(a) as being unpatentable over Petsko et al. U.S. Patent No. 6,292,516 (hereinafter referred to as "Petsko") in view of Harris U.S. Patent No. 5,200,979 (hereinafter referred to as "Harris"). As set forth herein below, Applicant respectfully disagrees and submits that claims 1-20, 39-43, 49, 50-52 and 54 distinguish clearly and patentably over the cited art.

Independent claim 1

The Examiner's attention is directed to the following emphasized limitations of claim 1:

"A communications signal [...] , comprising:

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wherein each wrapper symbol is characterized by a signal level transition pattern, said signal level transition pattern being either a first pattern or a second pattern depending on the logic value of the respective information bit; and

wherein the first and second patterns each have a distinct average signal level and are each characterized by at least one signal level transition."

To begin with, Applicant respectfully submits that Petsko does not teach or suggest the above-emphasized limitations of claim 1. Rather, Petsko describes a signal in which test words are inserted between adjacent data fragments. A test word, which comprises *n* concatenated groups of "bits (or symbols)", one for each of *n* antennas, is used to help a receiver identify the antenna demonstrating the highest quality during reception. As mentioned above, and as shown in Fig. 4, Petsko uses the term "bits (or symbols)" to refer to the contents of the test word 40. However, it is not clear what characteristics the test word 40 of Fig. 4 would have if it were formed of "symbols" rather than "bits". In fact, Petsko is totally silent on any notion of signal level transition patterns that would suitably characterize the symbols in the test word, assuming that the test word were to contain symbols in the first place. In view of Petsko's silence regarding signal level transition patterns, it should be appreciated that Petsko cannot be said to disclose or suggest at least the above-emphasized limitations of claim 1.

Moreover, Applicant respectfully submits that the Examiner has not shown these missing limitations to be taught or suggested by Harris. Specifically, Harris teaches a line coding scheme. The passages echoed by the Examiner (col. 1, lines 40-50

[sic]) present the mere observation that a signal has a DC balance, or DC component, created by the average time the signal is on in relation to the time it is off. However, it is not at all clear how the Examiner could have equated this simple observation to a teaching or suggestion of the features of claim 1 that have already been shown to be totally absent from Petsko, namely "each wrapper symbol [being] characterized by a signal level transition pattern, [which is] either a first pattern or a second pattern depending on the logic value of the respective information bit, wherein the first and second patterns each have a distinct average signal level and are each characterized by at least one signal level transition."

For the above reasons, it is respectfully submitted that at least one limitation of claim 1 is neither taught nor suggested by the cited art, whether taken severally or in combination. Therefore, Applicant respectfully submits that there is at least one criterion, required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j), which is in this case <u>not</u> satisfied[1]. The Examiner is thus respectfully requested to withdraw his rejection of claim 1.

Additionally, Applicant respectfully submits that the Examiner has improperly combined the Petsko and Harris references. Specifically, the Examiner's attention is directed to following statement made on page 2 of the Office Action: "It would have been obvious to one of ordinary skill in the art at the time of invention that a [sic] every binary word has a distinct average signal level since the a [sic] binary symbol has bit transitions and therefore creates a dc bias based upon the time the [sic] it is off [.]" With respect, this statement is erroneous and serves as an erroneous basis for combining Petsko and Harris.

Firstly, it is incorrect to contend that every binary word or symbol has a distinct average signal level. Consider any code with distinct binary symbols having a duty

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[1] For the Examiner to establish a *prima facie* case of obviousness, three criteria must be considered: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all of the claim limitations. MPEP §§ 706.02(j), 2142 (8th ed.).

cycle of 50%. Both binary symbols will have the same average signal level. In fact, there are many such codes which maintain, as Harris herself puts it, "minimum or zero dc balance" (see col. 1, line 53). The mere existence of such codes clearly refutes the Examiner's statement that it would be "obvious [...] that every binary word has a distinct average signal level".

Secondly, it is incorrect to contend that because a binary symbol has bit transitions, it "creates a dc bias". Rather, it will be appreciated that two symbols with different transition patterns may have either the same or different average signal levels.

Thirdly, the Examiner has not pointed to any indication in Petsko or Harris as to the reason for, or desirability of, having distinct average signal levels for the signal level transition pattern corresponding to a logic 0 and for the signal level transition pattern corresponding to a logic 1. Similarly, the Examiner has not pointed to any indication in Petsko or Harris as to the reason for, or desirability of, having at least one signal level transition in each of the two possible patterns.

Therefore, it is respectfully submitted that the Examiner has improperly established a basis on which to combine Petsko and Harris, not to mention the fact that such basis is absent from the cited art. For these additional reasons, it is respectfully submitted that a further criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) has not been satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 1.

Dependent claims 2-9

Claims 2-9 depend either directly or indirectly on claim 1 and therefore include all of the limitations of claim 1. Hence, for the same reasons as those set forth herein above in respect of claim 1, Applicant respectfully submits that claims 2-9 are in allowable form and, thus, the Examiner is respectfully requested to withdraw his rejection of claims 2-9.

Independent claim 10

The Examiner's attention is directed to the following emphasized limitations of claim 10:

"A communications signal [...], comprising:

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wherein each signal level sequence is characterized by an average signal level indicative of the binary value of a bit of an information bit stream; and

wherein each signal level sequence comprises at least one intermediate signal level transition."

To begin with, Applicant respectfully submits that Petsko does not teach or suggest the above-emphasized limitations of claim 10. Rather, Petsko describes a signal in which test words are inserted between adjacent data fragments. A test word, which comprises *n* concatenated groups of "bits (or symbols)", one for each of *n* antennas, is used to help a receiver identify the antenna demonstrating the highest quality during reception. As mentioned above, and as shown in Fig. 4, Petsko uses the term "bits (or symbols)" to refer to the contents of the test word 40. However, it is not clear what characteristics the test word 40 of Fig. 4 would have if it were formed of "symbols" rather than "bits". In fact, Petsko is totally silent on any notion of signal level sequences that would suitably characterize the symbols in the test word, assuming that the test word were to contain symbols in the first place. In view of Petsko's silence regarding signal level sequences and signal level transitions, it should be appreciated that Petsko cannot be said to disclose or suggest at least the above-emphasized limitations of claim 10.

Moreover, Applicant respectfully submits that the Examiner has not shown these missing limitations to be taught or suggested by Harris. Specifically, Harris teaches a line coding scheme. The passages echoed by the Examiner (col. 1, lines 40-50 [*sic*]) present the mere observation that a signal has a DC balance, or DC

component, created by the average time the signal is on in relation to the time it is off. However, it is not at all clear how the Examiner could have equated this simple observation to a teaching or suggestion of the features of claim 10 that have already been shown to be totally absent from Petsko, namely "each wrapper segment [comprising] a contiguity of signal level sequences, [which] is characterized by an average signal level indicative of the binary value of an information bit stream, wherein each signal level sequence comprises at least one intermediate signal level transition."

For the above reasons, it is respectfully submitted that at least one limitation of claim 10 is neither taught nor suggested by the cited art, whether taken severally or in combination. Therefore, Applicant respectfully submits that there is at least one criterion, required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j), which is in this case not satisfied. The Examiner is thus respectfully requested to withdraw his rejection of claim 10.

Additionally, Applicant respectfully submits that the Examiner has improperly combined the Petsko and Harris references. Specifically, the Examiner's attention is directed to following statement made on page 2 of the Office Action: "It would have been obvious to one of ordinary skill in the art at the time of invention that a [*sic*] every binary word has a distinct average signal level since the a [*sic*] binary symbol has bit transitions and therefore creates a dc bias based upon the time the [*sic*] it is off [.]" With respect, this statement is erroneous and serves as an erroneous basis for combining Petsko and Harris.

Firstly, it is incorrect to contend that every binary word or symbol has a distinct average signal level. Consider any code with distinct binary symbols having a duty cycle of 50%. Both binary symbols will have the same average signal level. In fact, there are many such codes which maintain, as Harris herself puts it, "minimum or zero dc balance" (see col. 1, line 53). The mere existence of such codes clearly

refutes the Examiner's statement that it would be "obvious [...] that every binary word has a distinct average signal level".

Secondly, it is incorrect to contend that because a binary symbol has bit transitions, it "creates a dc bias". Rather, it will be appreciated that two symbols with different transition patterns may have either the same or different average signal levels.

Thirdly, the Examiner has not pointed to any indication in Petsko or Harris as to the reason for, or desirability of, having an average signal level indicative of the binary value of a bit of an information stream. Similarly, the Examiner has not pointed to any indication in Petsko or Harris as to the reason for, or desirability of, having at least one signal level transition in each signal level sequence.

Therefore, it is respectfully submitted that the Examiner has improperly established a basis on which to combine Petsko and Harris, not to mention the fact that such basis is absent from the cited art. For these additional reasons, it is respectfully submitted that a further criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) has not been satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 10.

Dependent claims 11 and 17-19

Claims 11 and 17-19 depend directly on claim 10 and therefore include all of the limitations of claim 10. Hence, for the same reasons as those set forth herein above in respect of claim 10, Applicant respectfully submits that claims 11 and 17-19 distinguish clearly and patentably over the cited art and, therefore, the Examiner is respectfully requested to withdraw his rejection of claims 11 and 17-19.

Dependent claim 12

Claim 12 depends directly on claim 10 and therefore includes all of the limitations of claim 10. Hence, for the same reasons as those set forth herein above in respect of claim 10, Applicant respectfully submits that claim 12 is in allowable form and, therefore, the Examiner is respectfully requested to withdraw his rejection of claim 12.

In addition, the Examiner's attention is directed to the following additional limitation of claim 12:

"wherein each signal level sequence is either a first pattern or a second pattern, depending on the binary value of the respective bit of the information bit stream."

It is respectfully submitted that Petsko in view of Harris does not teach or suggest the above additional limitation of claim 12. Specifically, as already argued above in respect of claim 1, the Examiner has shown neither Petsko nor Harris to teach or suggest a communications signal comprising wrapper segments each characterized by a signal level transition pattern that is "either a first pattern or a second pattern depending on the binary value of the respective bit of the information bit stream".

Thus, notwithstanding the dependency of claim 12 on claim 10, Applicant respectfully submits that at least one additional limitation of claim 12 is neither taught nor suggested by the cited art, whether taken severally or in combination. As such, it is respectfully submitted that claim 12 distinguishes clearly and patentably over the cited art and, therefore, the Examiner is respectfully requested to withdraw his rejection of claim 12.

Dependent claims 13-16

Claims 13-16 depend either directly or indirectly on claim 12 (and claim 10) and therefore include all of the limitations of claim 12 (and claim 10). Hence, for the same reasons as those set forth herein above in respect of claim 12 (and claim 10),

Applicant respectfully submits that claims 13-16 are in allowable form and, thus, the Examiner is respectfully requested to withdraw his rejection of these claims.

Independent claim 20

The Examiner's attention is directed to the following emphasized limitations of claim 20:

> "A communications signal [...], comprising:
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> *****
>
> wherein each binary signal level pattern is either a first pattern or a second pattern, the first and second patterns being associated with respective ones of two possible logic values for a bit in the information bit stream;
> wherein the first pattern consists mostly of a low signal level and partly of a high signal level; and
> wherein the second pattern consists mostly of the high signal level and partly of the low signal level."

To begin with, Applicant respectfully submits that Petsko does not teach or suggest the above-emphasized limitations of claim 20. Rather, Petsko describes a signal in which test words are inserted between adjacent data fragments. A test word, which comprises *n* concatenated groups of "bits (or symbols)", one for each of *n* antennas, is used to help a receiver identify the antenna demonstrating the highest quality during reception. As mentioned above, and as shown in Fig. 4, Petsko uses the term "bits (or symbols)" to refer to the contents of the test word 40. However, it is not clear what characteristics the test word 40 of Fig. 4 would have if it were formed of "symbols" rather than "bits". In fact, Petsko is totally silent on any notion of signal level patterns that would suitably characterize the symbols in the test word, assuming that the test word were to contain symbols in the first place. In view of Petsko's silence regarding signal level patterns, it should be appreciated that Petsko cannot be said to disclose or suggest at least the above-emphasized limitations of claim 20.

Moreover, Applicant respectfully submits that the Examiner has not shown these missing limitations to be taught or suggested by Harris. Specifically, Harris teaches a line coding scheme. The passages echoed by the Examiner (col. 1, lines 40-50 [sic]) present the mere observation that a signal has a DC balance, or DC component, created by the average time the signal is on in relation to the time it is off. However, it is not at all clear how the Examiner could have equated this simple observation to a teaching or suggestion of the features of claim 20 that have already been shown to be totally absent from Petsko, namely "each wrapper segment consisting of a concatenation of binary signal level patterns, [each of which] is either a first pattern or a second pattern, the first and second patterns being associated with respective ones of two possible logic values for a bit in the information bit stream, wherein the first pattern consists of mostly of a low signal level and partly of a high signal level, and wherein the second patterns consist mostly of the high signal level and partly of the low signal level."

For the above reasons, it is respectfully submitted that at least one limitation of claim 20 is neither taught nor suggested by the cited art, whether taken severally or in combination. Therefore, Applicant respectfully submits that there is at least one criterion, required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j), which is in this case not satisfied. The Examiner is thus respectfully requested to withdraw his rejection of claim 20.

Additionally, Applicant respectfully submits that the Examiner has improperly combined the Petsko and Harris references. Specifically, the Examiner's attention is directed to following statement made on page 2 of the Office Action: "It would have been obvious to one of ordinary skill in the art at the time of invention that a [sic] every binary word has a distinct average signal level since the a [sic] binary symbol has bit transitions and therefore creates a dc bias based upon the time the [sic] it is off [.]" With respect, this statement is erroneous and serves as an erroneous basis for combining Petsko and Harris.

Firstly, it is incorrect to contend that every binary word or symbol has a distinct average signal level. Consider any code with distinct binary symbols having a duty cycle of 50%. Both binary symbols will have the same average signal level. In fact, there are many such codes which maintain, as Harris herself puts it, "minimum or zero dc balance" (see col. 1, line 53). The mere existence of such codes clearly refutes the Examiner's statement that it would be "obvious [...] that every binary word has a distinct average signal level".

Secondly, it is incorrect to contend that because a binary symbol has bit transitions, it "creates a dc bias". Rather, it will be appreciated that two symbols with different transition patterns may have either the same or different average signal levels.

Thirdly, the Examiner has not pointed to any indication in Petsko or Harris as to the reason for, or desirability of, having an average signal level indicative of the binary value of a bit of an information stream. Similarly, the Examiner has not pointed to any indication in Petsko or Harris as to the reason for, or desirability of, having at least one signal level transition in each signal level sequence.

Therefore, it is respectfully submitted that the Examiner has improperly established a basis on which to combine Petsko and Harris, not to mention the fact that such basis is absent from the cited art. For these additional reasons, it is respectfully submitted that a further criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) has not been satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 20.

Independent claim 39

The Examiner's attention is directed to the following limitations of claim 39:

"A method [...], comprising the steps of:

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wherein the second transforming step includes mapping each overhead bit into a wrapper symbol which is represented by either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit; and

wherein the first and second signal level transition patterns each have a distinct average signal level and are each characterized by at least one signal level transition."

As has already been set forth in respect of claim 1, it is respectfully submitted that the Examiner has not shown Petsko or Harris, whether taken severally or in combination, to teach or suggest "a wrapper symbol which is represented by either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit". Also, the Examiner has not shown Petsko or Harris, whether taken severally or in combination, to teach or suggest that "the first and second signal level transition patterns each have a distinct average signal level and are each characterized by at least one signal level transition". Therefore, it is respectfully submitted that at least one limitation of claim 39 is neither taught nor suggested by the cited art whether taken severally or in combination.

Moreover, as has already been mentioned, it is Applicant's respectful submission that the Examiner has improperly established a basis on which to combine Petsko and Harris, notwithstanding the fact that such basis is absent from the cited art.

As such, Applicant respectfully submits that there are at least two criteria, required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j), which are in this case not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 39.

Dependent claims 40-43

Claims 40-43 depend either directly or indirectly on claim 39 and therefore include all of the limitations of claim 39. Hence, for the same reasons as those set forth herein above in respect of claim 39, Applicant respectfully submits that claims 40-43 distinguish clearly and patentably over the cited art and, thus, the Examiner is respectfully requested to withdraw his rejection of claims 40-43.

Independent claim 49

The Examiner's attention is directed to the following limitations of claim 49:

"A system [...], comprising:

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wherein the second transforming step includes mapping each overhead bit into a wrapper symbol which is represented by either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit; and

wherein the first and second signal level transition patterns each have a distinct average signal level and are each characterized by at least one signal level transition."

As has already been set forth in respect of claim 1, the Examiner has not shown either Petsko or Harris, whether taken severally or in combination, to teach or suggest "a wrapper symbol which is represented by either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit". Petsko and Harris taken severally or in combination also fail to teach or suggest that "the first and second signal level transition patterns each have a distinct average signal level and are each characterized by at least one signal level transition".Therefore, it is respectfully submitted that at least one limitation of claim 49 is neither taught nor suggested by the cited art whether taken severally or in combination.

Moreover, as has already been mentioned, it is Applicant's respectful submission that the Examiner has improperly established a basis on which to combine Petsko and Harris, notwithstanding the fact that such basis is absent from the cited art.

As such, Applicant respectfully submits that there are at least two criteria, required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j), which are in this case not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 49.

Dependent claims 50-52

Claims 50-52 depend either directly or indirectly on claim 49 and therefore include all of the limitations of claim 49. Hence, for the same reasons as those set forth herein above in respect of claim 49, Applicant respectfully submits that claims 50-52 distinguish clearly and patentably over the cited art and, therefore, the Examiner is respectfully requested to withdraw his rejection of claims 50-52.

Independent claim 54

The Examiner's attention is directed to the following emphasized limitations of claim 54:

> "A wrapper symbol coder for mapping each of a plurality of overhead bits into a wrapper symbol, the coder being operable to produce **either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of each overhead bit**, wherein the first and second signal level transition patterns are each characterized by having **a distinct average signal level** and are each further characterized by **at least one signal level transition**."

As has already been set forth in respect of claim 1, it is Applicant's respectful submission that the Examiner has not shown Petsko or Harris, whether taken severally or in combination, to teach or suggest a wrapper symbol which is represented by "either a first signal level transition pattern or a second signal level

transition pattern depending on the logical value of the overhead bit". Petsko and Harris taken severally or in combination also do not teach or suggest that "the first and second signal level transition patterns are each characterized by having a distinct average signal level and are each further characterized by at least one signal level transition".Therefore, it is respectfully submitted that at least one limitation of claim 54 is neither taught nor suggested by the cited art whether taken severally or in combination.

Moreover, as has already been mentioned, it is Applicant's respectful submission that the Examiner has improperly established a basis on which to combine Petsko and Harris, notwithstanding the fact that such basis is absent from the cited art.

As such, Applicant respectfully submits that there are at least two criteria, required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j), which are in this case not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 54.

2) Rejection of claims 22-26, 29 and 30-38 under 35 USC 103

In the Office Action, the Examiner has rejected claims 22-26, 29 and 30-38 under 35 USC 103(a) as being unpatentable over Petsko et al. U.S. Patent No. 6,292,516 (hereinafter referred to as "Petsko") in view of Harris U.S. Patent No. 5,200,979 (hereinafter referred to as "Harris") and in further view of Nakamura et al. U.S. Patent No. 5,857,092 (hereinafter referred to as "Nakamura"). As set forth herein below, Applicant respectfully disagrees and submits that claims 22-26, 29 and 30-38 distinguish clearly and patentably over the cited art.

Independent claim 22

The Examiner's attention is directed to the following limitations of claim 22:

"A method [...], the method comprising the steps of:

converting the composite optical signal into an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream;

locating the position of each wrapper segment in the low-bandwidth electrical signal; and

detecting individual bits of the overhead bit stream from the average level of the low-bandwidth electrical signal during the located wrapper segments."

Firstly, Petsko does not teach or suggest any conversion of an optical signal into an electrical signal, much less the conversion of an optical signal into "an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream".

Secondly, the Examiner has not shown Harris to teach or suggest the above limitation of claim 22 already shown to be totally absent from Petsko. Parenthetically, and notwithstanding that the Examiner has raised this on page 5 of the Office Action in respect of claims 33 and 37 and *not* in respect of claim 22, Applicant respectfully submits that the Examiner has erred in his contention that "Harris disclosed wherein [*sic*] the receiver has a bandwidth which is significantly less than the bit rate of the high-speed data stream. (Harris figure 3)." In fact, Applicant fails to see how Figure 3 of Harris, which shows a flow chart representing operation of an encoder of a transmitter (col. 3, lines 66-67 and col. 4, lines 38-39), supports the Examiner's contention. The Examiner has not pointed to any mention in Harris of conversion of an optical signal into "an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream".

Thirdly, it is respectfully submitted that Nakamura also does not teach or suggest the above-mentioned limitation of claim 22 already shown to be missing from both Petsko and Harris (whether taken individually or in combination). Specifically, Nakamura in no way teaches or suggests "converting [an] optical signal into an

electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream".

Rather, Nakamura relates to an interface apparatus for interconnecting apparatus of two different systems, namely, an apparatus of the SDH system and an apparatus of the SONET system. The interface apparatus of Nakamura includes a "light/electricity converting unit 141 [that] converts [an] STM-n signal (or STS-m signal) inputted through a transmission line (mainly an optical fiber) into an electrical signal" (col. 20, line 66 to col. 21, line 2). However, Nakamura does not further characterize the conversion performed by the "light/electricity converting unit". In particular, Nakamura totally lacks any teaching or suggestion that the "light/electricity converting unit" converts the optical signal into "an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream".

Furthermore, since Nakamura does not teach or suggest conversion of an optical signal into a low-bandwidth electrical signal, it follows that Nakamura cannot possibly teach or suggest "locating the position of each wrapper segment in the low-bandwidth electrical signal" and "detecting individual bits of the overhead bit stream from the average level of the low-bandwidth electrical signal during the located wrapper segments".

For the above reasons, it is respectfully submitted that at least one limitation of claim 22 is neither taught nor suggested by the cited art, whether taken severally or in combination. As such, Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, it is respectfully submitted that claim 22 is in allowable form and, thus, the Examiner is respectfully requested to withdraw his rejection of claim 22.

Dependent claims 23-26 and 29-31

Claims 23-26 and 29-31 depend either directly or indirectly on claim 22 and therefore include all of the limitations of claim 22. Hence, for the same reasons as those set forth herein above in respect of claim 22, Applicant respectfully submits that claims 23-26 and 29-31 distinguish clearly and patentably over the cited art and, thus, the Examiner is respectfully requested to withdraw his rejection of claims 23-26 and 29-31.

Dependent claims 27-28

In the Office Action, the Examiner objected to claims 27-28 as being dependent upon a rejected base claim (claim 22) but stated that these claims would be allowable if rewritten in independent form including the limitations of the base claim and any intervening claims.

Now, claims 27-28 depend indirectly on claim 22 and therefore include all of the limitations of claim 22. Hence, for the same reasons as those set forth herein above in respect of claim 22, Applicant respectfully submits that claims 27-28 are in allowable form and, therefore, the Examiner is respectfully requested to withdraw his objection to claims 27-28.

Independent claim 32

The Examiner's attention is directed to the following limitations of claim 32:

> "A system [...], comprising:
>> a receiver for converting the composite optical signal into an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream;

a wrapper segment identifier connected to the receiver, for locating the position of each wrapper segment in the low-bandwidth electrical signal; and

a detector connected to the wrapper segment identifier, for detecting individual bits of the overhead bit stream from the average level of the low-bandwidth electrical signal during the located wrapper segments."

Applicant respectfully submits that the same arguments as those already set forth in respect of claim 22 apply in respect of claim 32. Thus, it is respectfully submitted that at least one limitation of claim 32 is neither taught nor suggested by the cited art, whether taken severally or in combination. As such, Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 32.

Dependent claims 33-35

Claims 33-35 depend either directly or indirectly on claim 32 and therefore include all of the limitations of claim 32. Hence, for the same reasons as those set forth herein above in respect of claim 32, Applicant respectfully submits that claims 33-35 are in allowable form and, therefore, the Examiner is respectfully requested to withdraw his rejection of claims 33-35.

Independent claim 36

The Examiner's attention is directed to the following limitations of claim 36:

"A system [...], comprising:

means for converting the composite optical signal into an electrical signal having an electrical bandwidth that is substantially less than the bandwidth of the high-speed data stream;

means for locating the position of each wrapper segment in the low-bandwidth electrical signal; and

means for detecting individual bits of the overhead bit stream from the average level of the low-bandwidth electrical signal during the located wrapper segments."

Applicant respectfully submits that the same arguments as those already set forth in respect of claim 22 apply in respect of claim 36. Therefore, it is respectfully submitted that at least one limitation of claim 36 is neither taught nor suggested by the cited art, whether taken severally or in combination. As such, Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 36.

Dependent claim 37

Claim 37 depends directly on claim 36 and therefore includes all of the limitations of claim 36. Hence, for the same reasons as those set forth herein above in respect of claim 36, Applicant respectfully submits that claim 37 is in allowable form and, therefore, the Examiner is respectfully requested to withdraw his rejection of claim 37.

Independent claim 38

The Examiner's attention is directed to the following limitations of claim 38:

"A system [...], the system comprising:

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a plurality of receivers connected to the front end, for converting each single-carrier optical signal into a respective electrical signal having a bandwidth that is substantially less than the bandwidth of the corresponding high-speed data stream;

a plurality of wrapper segment identifiers connected to the plurality of receivers, for locating the position of wrapper segments in each low-bandwidth electrical signal; and

> a plurality of detectors connected to the plurality of wrapper segment identifiers, for detecting individual bits of the overhead bit streams from the average level of the corresponding low-bandwidth electrical signal during the located wrapper segments."

Applicant respectfully submits that the same arguments as those already set forth in respect of claim 22 apply in respect of claim 38. Therefore, it is respectfully submitted that at least one limitation of claim 38 is neither taught nor suggested by the cited art, whether taken severally or in combination. As such, Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 38.

In addition, Applicant respectfully submits that the cited art also does not teach or suggest "an optical tap coupler for coupling a fraction of the optical power of the WDM signal" and "a front end connected to the coupler, for separating the WDM signal into the plurality of single-carrier optical signals". With respect, the Examiner has not even addressed these limitations in his rejection of claim 38. For this additional reason, it is once more respectfully submitted that at least one limitation of claim 38 is neither taught nor suggested by the cited art, whether taken severally or in combination and, thus, that at least one criterion for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 38.

3) Rejection of claim 53 under 35 USC 103

In the Office Action, the Examiner has rejected claim 53 under 35 USC 103(a) as being unpatentable over Petsko et al. U.S. Patent No. 6,292,516 (hereinafter referred to as "Petsko") in view of Harris U.S. Patent No. 5,200,979 (hereinafter referred to as "Harris") as applied to claim 49 and in further view of Kolze et al. U.S. Patent No. 6,285,681 (hereinafter referred to as "Kolze"). As set forth herein below,

Applicant respectfully disagrees and submits that claim 53 distinguishes clearly and patentably over the cited art.

Dependent claim 53

Claim 53 depends directly on claim 49 and therefore includes all of the limitations of claim 49.

Now, it has already been argued that Petsko and Harris have not been shown to teach or suggest "a wrapper symbol which is represented by either a first signal level transition pattern or a second signal level transition pattern depending on the logical value of the overhead bit". Petsko and Harris have also not been shown to teach or suggest "the first and second signal level transition patterns each have a distinct average signal level and are each characterized by at least one signal level transition". Furthermore, it is respectfully submitted that Kolze also does not teach or suggest these limitations of claim 49 which have already been shown to be missing from Petsko and Harris (whether taken severally or in combination).
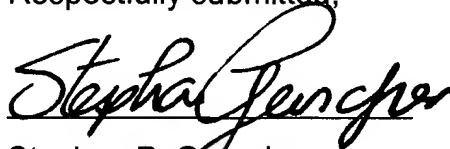
Therefore, it is respectfully submitted that at least one limitation of claim 49, and thus of claim 53, is neither taught nor suggested by the cited art whether taken severally or in combination. As such, Applicant respectfully submits that at least one criterion required for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) is not satisfied. Accordingly, the Examiner is respectfully requested to withdraw his rejection of claim 53.

IV. CONCLUSION

In view of the foregoing, Applicant is of the view that claims 1-54 are in allowable form. Favorable reconsideration is requested. Early allowance of the Application is earnestly solicited.

If the claims of the application are not considered to be in full condition for allowance, for any reason, Applicant respectfully requests the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP 707.07(j) or in making constructive suggestions pursuant to MPEP 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,

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